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FOREST RESEARCH NOTES

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EXPERIMENT STATION *
M.W. TALBOT, Acting Director

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TAPER AND VOLUME TABLES FOR JEFFREY PINE ON THE MONO NATIONAL FOREST

By

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Taper and volume tables for Jeffrey pine (Pinus jeffreyi) have not been available heretofore. Jeffrey pine is not ordinarily distinguished from ponderosa pine (P. ponderosa) in the lumber industry, hence its volume has usually been calculated from ponderosa pine tables. Although the two species are often confused, foresters commonly regard them as different in form. The existence of specific differences in form has never been definitely established or disproved by measurements, largely because confusion of identities is frequently evident in the records.

In 1924 trees of the two species were measured in the same locality with the object of form comparison, but even though special care was exercised the results were not completely reliable. In this instance there was suspected a tendency for the field workers to call a disproportionate number of the younger trees Jeffrey pine. Although these records were unacceptable as bases for separate tables, they strengthened the belief that these two pines are unlike in form; the disparities were obviously too large to be accounted for by partial inclusion of differences related to age.

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* MAINTAINED AT BERKELEY, CALIFORNIA, IN COOPERATION WITH THE UNIVERSITY OF CALIFORNIA.

In addition to the probability of form peculiarities, three other circumstances now favor preparation of special tables for Jeffrey pine: Methods of distinguishing the tree from ponderosa pine are more generally known than formerly; timber sales, land exchanges, and lumbering have recently assumed importance in stands predominantly Jeffrey pine; and enough authentic form data are available for at least local tables.

The tables presented herewith are based on 97 trees measured in 1941 by District Ranger D. J. Lewis on the logging operation of the Inyo Lumber Company. This area in the Mono National Forest on the east slope of the Sierra Nevada is considered to be representative of Site IV-100[1/].

The taper tables were constructed and harmonized by the graphic method. The volume table was prepared directly from the taper tables by addition of the log volumes for each tree diameter and height class.

Comparison of the tabular volume with the scale of the 97 basic trees — 129,250 bd. ft. — shows a reasonably good correspondence, the tabular figure being 2.29 percent lower than the scale. The diameter and log-class comparisons show that the tabular departures from scale are consistently small and have no definite trend.

Because of the small number of trees measured and the restricted area sampled, use of the tables should be confined to the locality of origin until field tests justify wider application.

Users are urged to take advantage of opportunities to measure additional trees for such field checks so that the tables may be adjusted if necessary. The type of measurements required is apparent from the information on methods of construction printed on each table.

[1/] Site IV-100 designates sites on which the dominant trees average 100 feet in total height at 300 years. The site scale is described in Research Note No. 28, Calif. Forest & Range Expt. Sta., "A Site Classification for the Mixed-conifer Selection Forests of the Sierra Nevada" by Duncan Dunning, 1943.

TAPER AND VOLUME TABLES

JEFFREY PINE

(Pinus Jeffreyi)
Site IV-100
Mono National Forest
Prepared by
California Forest and Range Experiment Station
1942

Scribner Dec. C.
Logs 16.3 ft.
Top d.i.b. 8 in.
Stump 1.5 ft.

Clements

D.b.h. inches	Height 16' logs to 8" top	Diameter inside bark - inches: Log number 1	2	3	4	5	6	Volume - board feet - tens: Log number 1	2	3	4	5	6	Tree volume bd.ft. tens
16	1	8						3						3
	2	12	8					8	3					11
	3	13	12	8				10	8	3				21
18	1	8						3						3
	2	13	8					10	3					13
	3	14	12	8				11	8	3				22
20	1	8						3						3
	2	14	8					11	3					14
	3	15	13	8				14	10	3				27
	4	16	14	11	8			16	11	7	3			37
22	2	15	8					14	3					17
	3	16	13	8				16	10	3				29
	4	17	15	12	8			18	14	8	3			43
24	2	16	8					16	3					19
	3	17	14	8				18	11	3				32
	4	18	16	12	8			21	16	8	3			48
	5	18	17	14	11	8		21	18	11	7	3		60
26	2	17	8					18	3					21
	3	18	15	8				21	14	3				38
	4	19	16	13	8			24	16	10	3			53
	5	20	18	15	12	8		28	21	14	8	3		74
28	3	19	15	8				24	14	3				41
	4	20	17	13	8			28	18	10	3			59
	5	21	19	16	12	8		30	24	16	8	3		81
30	3	20	16	8				28	16	3				47
	4	21	18	14	8			30	21	11	3			65
	5	22	20	17	13	8		33	28	18	10	3		92
	6	24	22	18	15	12	8	40	33	21	14	8	3	119
32	3	21	17	8				30	18	3				51
	4	23	20	15	8			38	28	14	3			83
	5	24	22	18	13	8		40	33	21	10	3		107
	6	25	23	19	16	12	8	46	38	24	16	8	3	135

D.b.h. inches	Height 16' logs to 8" top	Log number — Diameter inside bark - inches						Log number — Volume - board feet - tens						Tree volume bd.ft. tens
		1	2	3	4	5	6	1	2	3	4	5	6	
34	3	22	18	8				33	21	3				57
	4	24	21	16	8			40	30	16	3			89
	5	25	23	19	14	8		46	38	24	11	3		122
	6	26	24	20	17	12	8	50	40	28	18	8	3	147
36	3	24	19	8				40	24	3				67
	4	26	22	17	8			50	33	18	3			104
	5	27	24	20	15	8		55	40	28	14	3		140
	6	28	25	21	18	13	8	58	46	30	21	10	3	168
38	4	27	24	18	8			55	40	21	3			119
	5	28	25	21	16	8		58	46	30	16	3		153
	6	29	26	23	18	14	8	61	50	38	21	11	3	184
40	4	29	25	20	8			61	46	28	3			138
	5	29	27	22	16	8		61	55	33	16	3		168
	6	30	27	24	19	14	8	66	55	40	24	11	3	199
42	4	30	27	21	8			66	55	30	3			154
	5	30	28	24	18	8		66	58	40	21	3		188
	6	31	29	25	20	15	8	71	61	46	28	14	3	223
44	5	32	29	25	19	8		74	61	46	24	3		208
	6	33	30	26	22	16	8	78	66	50	33	16	3	246
46	5	33	31	26	20	8		78	71	50	28	3		230
	6	34	31	28	23	16	8	80	71	58	38	16	3	266
48	5	35	32	27	21	8		88	74	55	30	3		250
	6	35	33	29	24	17	8	88	78	61	40	18	3	288
50	5	36	33	29	23	8		92	78	61	38	3		272
	6	37	34	31	25	18	8	103	80	71	46	21	3	324
52	5	37	35	30	24	8		103	88	66	40	3		300
	6	38	36	32	26	19	8	107	92	74	50	24	3	350
54	6	39	37	33	28	20	8	112	103	78	58	28	3	382
56	6	41	38	35	29	21	8	127	107	88	61	30	3	416
58	6	42	40	36	30	22	8	134	120	92	66	33	3	448
60	6	44	41	38	32	23	8	148	127	107	74	38	3	497

Basis: 97 trees measured on the Mono National Forest in 1941.

VOLUME TABLE
JEFFREY PINE
(Pinus Jeffreyi)
Site IV-100
Mono National Forest
Prepared by
California Forest and Range Experiment Station

Clements 1942 Scribner, Decimal C.

D.b.h. inches	Number of 16-foot logs to 8.0" top d.i.b.						No. of trees
	1	2	3	4	5	6	
			Volume, bd. ft. - tens				
12	3	..	..	..	..	..	..
14	3	..	..	..	..	..	..
16	3	11	21	..	..	..	..
18	3	13	22	..	..	..	..
20	3	15	27	37	..	..	..
22	..	17	29	43	..	..	1
24	..	19	32	48	60	..	1
26	..	21	38	53	74	..	8
28	..	..	41	59	81	..	12
30	..	..	47	65	92	119	10
32	..	..	51	83	107	135	14
34	..	..	57	89	122	147	8
36	..	..	67	104	140	168	8
38	..	..	..	119	153	184	6
40	..	..	..	138	168	199	6
42	..	..	..	154	188	223	10
44	..	..	..	..	208	246	3
46	..	..	..	..	230	266	4
48	..	..	..	..	250	288	1
50	..	..	..	..	272	324	2
52	..	..	..	..	300	350	3
54	..	..	..	..	..	382	..
56	..	..	..	..	..	416	..
58	..	..	..	..	..	448	..
60	..	..	..	..	..	497	..
No. of trees	-	-	6	31	49	11	97

Prepared from taper table for Site IV-100.
Basis: 97 trees measured on the Mono National Forest by D. J. Lewis in 1941.
Stump height 1.5 ft.
Scaled in 16.3 ft. logs to 8.0 inch top d.i.b.
Aggregate deviation: table 2.29% low.
Average percentage deviation, 12.2%

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